DOCUMENT RESUME

ED 157 426 HE 010 242

AUTHOR Jacobsen, Marilyn-Lu Webb
TITLE Perceptions of Interdisciplinary Health Professions Education Within Health Sciences Centers. A Summary Report of Research.
INSTITUTION Texas A and M Univ., College Station. Coll. of Education.
PUB DATE Aug 77
NOTE 46p.

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Curriculum Development; Data Collection; *Health Occupations Education; Higher Education; Institutional Research; *Interdisciplinary Approach; Primary Health Care; Professional Education; Research Projects; *Surveys; Trend Analysis
IDENTIFIERS Delphi Method

ABSTRACT

A summary of a study of interdisciplinary eduation in the health sciences, conducted to identify the conditions and experiences needed to achieve specified objectives, is presented. Ten research questions were used to guide the direction of the research and the Delphi inquiry was used as a data-gathering technique. An expert panel of 15 vice presidents of health sciences were surveyed to obtain consensus on statements related to definition, philosophy, results of, and future projections of interdisciplinary health professions education. Results of this survey are discussed, including recognition of the emergence of the primary care team and the role of faculty in preparing that team. (Author/SPG)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED157426

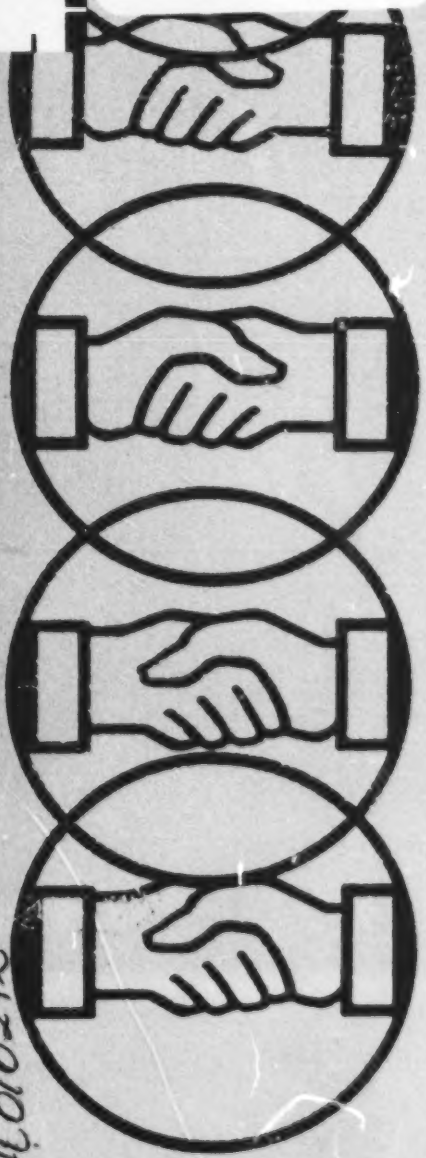
U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Marilyn-Lu W. Jacobsen

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."



HE010242

PERCEPTIONS OF INTERDISCIPLINARY HEALTH PROFESSIONS EDUCATION WITHIN HEALTH SCIENCES CENTERS

A Report of Research

Marilyn-Lu W. Jacobsen

Texas A & M University

August 1977

PERCEPTIONS OF INTERDISCIPLINARY HEALTH PROFESSIONS EDUCATION WITHIN HEALTH SCIENCES CENTERS

A Summary Report of Research

by

Marilyn-Lu Webb Jacobsen
Education Professions Development Fellow
Vocational Education Programs
College of Education
Texas A & M University
College Station, Texas 77843

August 1977

OE 0140 486

FOREWARD

Increasingly, the question is being asked as to whether or not interdisciplinary approaches to education among related fields should be followed. Educators in the different health professions have espoused interdisciplinary programs and in many cases have tried to implement them. Experiences with interdisciplinary programs have thus been gained.

This research study by Dr. Marilyn-Lu Jacobsen was undertaken to determine if consensus existed on the objectives of interdisciplinary education in the health sciences and to identify the conditions and experiences needed to achieve those objectives. The findings, conclusions, and recommendations reported in Dr. Jacobsen's study should provide "food for thought" for educators in the health professions concerned with developing curricula.

If the reader wishes to learn more about the study, please contact Dr. Marilyn-Lu Jacobsen, Assistant Dean for Undergraduate Education, Medical Center Annex #2, College of Nursing, University of Kentucky, Lexington, Kentucky 40506.

James E. Christiansen
Professor, Agricultural Education
Texas A&M University
August, 1977

ACKNOWLEDGEMENTS

Sincere appreciation is extented to the Vice Presidents of Health Sciences for the time and the sage wisdom they so generously gave to this study.

The assistance of Dr. J. McNamara, Dr. L. Ponder, Dr. D. Sweeney, Dr. J. Hoyle in planning this study and critiquing the material is gratefully acknowledged. Dr. James Christiansen deserves an award of supreme merit for his wise counsel, continuous support, and the unselfish giving of time.

Marilyn-Lu Jacobsen

TABLE OF CONTENTS

Page

Forward i

Acknowledgements ii

List of Tables iv

List of Figures v

Introduction 1

Purpose 1

Summary of Findings 2

Conclusions and Implications 3

Definition of interdisciplinary education within the health sciences . . .3

Objectives defined and the most important identified 4

Educational strategies 8

Value of interdisciplinary activities 10

Common subject areas 10

Barriers 12

A need of future health care delivery 14

Abandon interdisciplinary courses? 15

When to introduce concept 15

Are faculties, facilities & learning resourses used more efficiently? . . 17

Research responsibilities 19

Conclusions 19

Recommendations 22

Audio visual presentation 25

References 26

LIST OF TABLES

Page

Table 1 9

Teaching Strategies, Content Delivery, Timing of Interdisciplinary Health Profession Education

Table 2 11

Value Statement Related to Interdisciplinary Health Professions Education

Table 3 14

Barriers to Interdisciplinary Health Professions Education and Corrective Actions

Table 4 19

Statements Relating to Administration of Interdisciplinary Health Profession Programs

Table 5 21

Future Predictions Related to Health Professions Education

List of Figures

Page

Figure 1 7

Rank and relative importance of objectives of interdisciplinary health professions education

Figure 2 16

Responses of vice presidents of health sciences centers to change strategies suggested to achieve integration of interdisciplinary concepts

Figure 3 20

Responses by vice presidents of health sciences centers to the possible role of the academic health sciences centers in research related to interdisciplinary activities

PERCEPTIONS OF INTERDISCIPLINARY HEALTH PROFESSIONS EDUCATION WITHIN HEALTH SCIENCE CENTERS

Introduction

The concept of interdisciplinary health professions education was espoused as a major thrust for education in the sixties. Many problems have emerged as the health sciences centers attempted to implement the concept. The following is a summary of a study undertaken to identify some of the problems and possible solutions as perceived by a group of experts.

Purpose

The purpose of this study was to obtain consensus on the objectives of interdisciplinary education in the health sciences and to identify the conditions and experiences needed to achieve those objectives.

Ten research questions were used to guide the direction of the research. Utilizing the Delphic inquiry in three stages as a data gathering technique, an expert panel of 15 vice presidents of health sciences was identified by a nomination process. In phase one of the research, the expert panel was surveyed by opinionnaire to obtain consensus on statements related to definition, philosophy, results of, and future projections of interdisciplinary health professions education. Feedback was received through written comments and telephone interviews. Phase II consisted of a collection of the rationale for the major polar positions. Phase III of the Delphi was the resubmission of questions which did not receive consensus and the new questions that were raised by the respondents. Tabulation of votes and the rationale for their positions formed the basis for drawing conclusions and implications, and making recommendations.

Summary of Findings

Based on the response profile for each research question, the following is a summary of the research findings:

1. The definition of interdisciplinary health professions education includes all of the following forms, when structured experiences are planned to create interaction between the health professionals:

   a. Students from same program being taught by faculty from a different program.

   b. Mixture of students from different programs, faculty from one health profession.

   c. Mixture of both students and faculty from different programs.

2. The most important objectives (out of 12) to be achieved by interdisciplinary health professions education are to:

   a. Prepare the health professional student to deliver coordinated health care.

   b. Develop a common philosophical frame for shared values and goals.

   c. Develop a mutual respect for various members of the health care team.

   d. Develop willingness to share responsibility for planning and delivery of patient care with multiple health professionals.

   e. Orient the student to the various professional roles in order to facilitate cross-disciplinary communication and planning of health care.

   f. Develop a common language among health professionals.

   g. Demonstrate the delivery of team health care.

3. The teaching strategy that will most effectively achieve the objectives of interdisciplinary health professions education is the use of an experiential clinical team.

4. The concept of interdisciplinary education in the health professions is valued as an important method to achieve the synergistic delivery of health care.

5. The common subject areas in the education of the various health professionals which are considered desirable are: ethics, medical terminology, medical records, health care delivery system, public health concepts, death and dying, aging and psychology of the handicapped.

6. The major barriers to interdisciplinary health professions education identified by this study were:

   a. Accreditation agencies who impose rigid standards.

b. Threat of domination by others and turf protection.

c. The lack of a positive image for the concept and misunderstanding of the philosophy.

d. The basic science overload that prohibits the student from paying equal attention to interdisciplinary courses and activities.

7. Interdisciplinary health professions courses are needed to assist the health professional to deliver effective, efficient and humanistic health care especially as it pertains to primary and ambulatory care.

8. Interdisciplinary health professions courses should not be abandoned, but need to be "institutionalized" and faculty efforts valued and rewarded.

9. It was recommended that interdisciplinary activities be started as early as possible in the professional program and a continuum of activities be established which will culminate with an experiential multidisciplinary team experience.

Conclusions and Implications

Based on the result of round three and the consensus items achieved on round I of the Delphi, it was concluded that there was consensus on the majority of the issues raised in this study. The research questions below form the skeleton used to group the conclusions and attendant implications systematically.

Research Questions One:

"What is the definition of interdisciplinary education within the health sciences?"

The panelists appeared to be more concerned with the milleu of the learning situation and wished to preserve for the definition of the term, the strictist interpretation of the concept. However, when asked to evaluate the effects of mixing students together and the achievement of information about roles through interdisciplinary classes, the respondents agreed that positive forces emerged here also. Therefore, it would seem plausible to conclude that all of the forms of interdisciplinary mixing of students and faculty do result in achieving an objective, if there are planned activities to achieve this goal. No longer can we simply schedule various health professions students into a lecture section and expect cross disciplinary communication to be established without a planned strategy

to achieve that goal. It is important to establish a homogeneous group if prerequisite courses are needed for the successful completion of the health professions courses. The unfortunate results have been that a negative impression of role competence has been established by this indiscriminate mixing of students.

Research Question Two and Three:

> "What are the objectives of interdisciplinary health professions education?" What objectives are the most important in achieving the purpose of interdisciplinary health professions education?"

The most important objective cited was "to prepare the student to deliver coordinated health care". This appears to be an indictment of the current educational system. Few practice models exist for the student to observe and to work within to learn how to deliver coordinated care. The literature stresses the importance of students practicing synergistic activities. From the comments of the panelists, it was concluded that little attention is given to the process of team dynamics and how to effect cooperative interaction. Again, this is consistent with multiple authors who stress the need for the health professionals to be sensitive to interpersonal and group dynamics.

The second and third objectives in importance, identified by the respondents, were "a willingness to share responsibility" and "developing of mutual respect for various members of the health care team". It was concluded that because of the importance given to these two objectives there is a necessity of developing the format in health sciences centers that builds confidence in the competence of a person who is a practitioner of another profession. The attendant implication is that it is necessary to place the students in situations where the specialized knowledge of a particular health profession, as applied to problem solving, will be utilized. The ideal situation appears to be in selecting and planning of an experiential clinical situation.

The objectives that were deemed least important were those that pertained to

career choice and career mobility. The apparent conclusion is that these are not important in a program of interdisciplinary education in the health sciences. However, counselling and adolescent research and the relevant literature in the health professions indicates that the student who enters a health profession at the undergraduate level may not be certain that he and his talents match the career track in which he is enrolled. How unfortunate it is for the student who elects or is counseled to change programs! Unless he has an academic program of liberal arts, or basic sciences as a foundation, he usually must start all over again in this new professional area. A point to consider also is that each of the health professional programs have overlapping content that could be amalgamated. The process of generating a core content helps each of the professional programs involved "to define its own objectives more clearly". The result is to establish a "syncytium of pertinence" that Hamburg described as important. One respondent in this study pointed out that the overlap within one program has produced so much redundancy that the total program has been considerably lengthened. Therefore, the implication exists to study the curriculum carefully and identify areas of overlap.

The range of response to the 12 objectives can be seen in Figure I, the number and the prediction about which objectives would probably occur within the next 10 years was disappointing, although it was probably an accurate forecast. There was a conservative movement toward further development of the interdisciplinary concept. Although the objectives were consistent with similar ones in the other educational fields and thus were not out of the ordinary, only four of twelve were predicted to occur in the future. The two objectives that were the most likely to occur were role identification and demonstration of team health care delivery. We seem to have the easiest to accomplish and the hardest to establish being predicted for the same time frame -- within 10 years. The attendant implication is that the goals are difficult to accomplish. Unless

Figure 1

The unique objectives of interdisciplinary health professions education courses within the health sciences center which have been arranged in rank order, are to:

*39. Prepare the health professional student to deliver coordinated health care.

38. Develop willingness to share responsibility for planning and delivery of patient care with multiple health professionals.

37. Develop a mutual respect for various members of the health care team.

32. Develop a common philosophical frame for shared values and goals.

35. Orient the student to the various professional roles for cross disciplinary communication and planning of health care.

31. Develop a common language among health professionals.

36. Demonstrate the delivery of team health care.

33. Develop a common knowledge base for all health professionals.

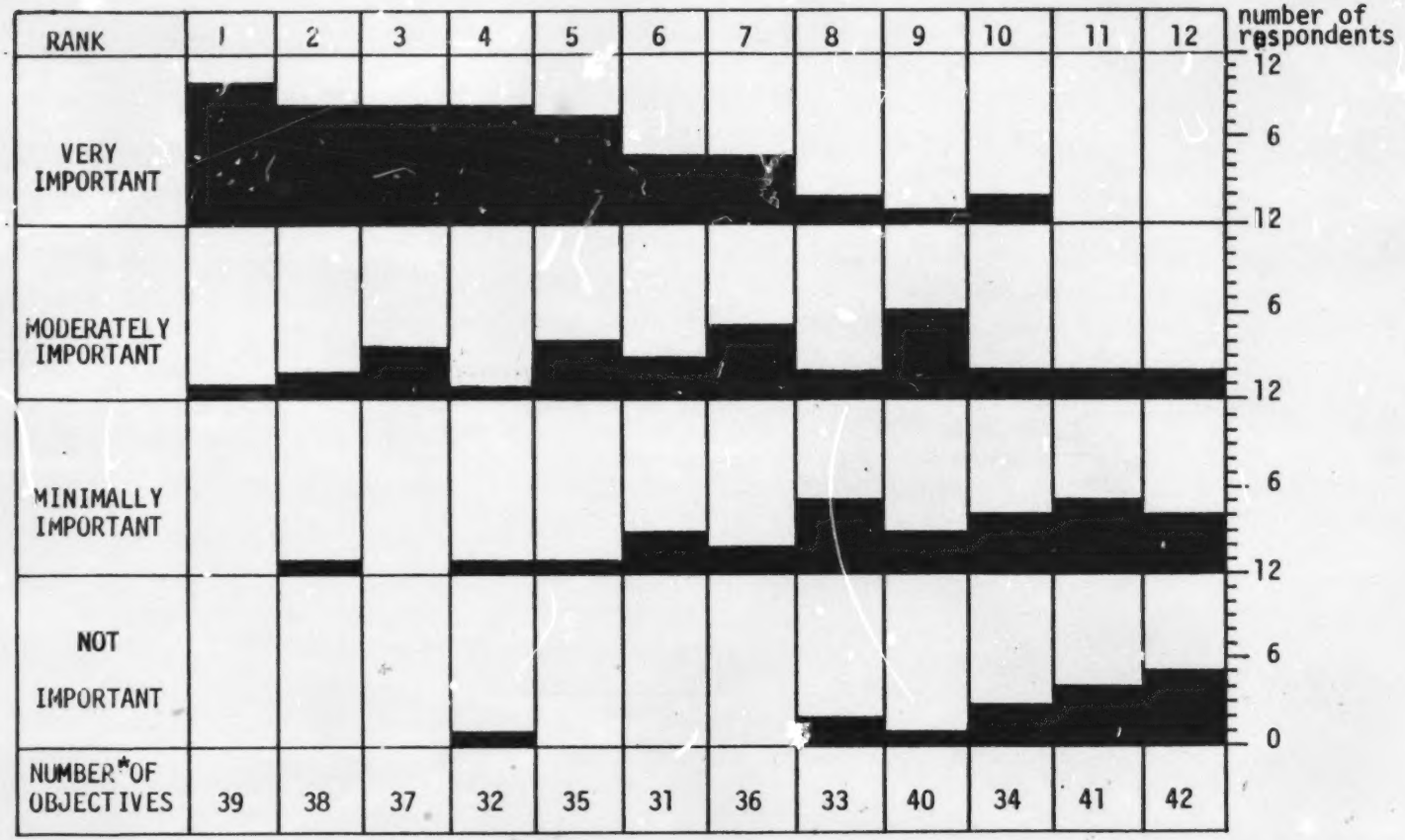
40. Learn to evaluate the health care services available.

34. Develop a common core of skills for professional practice.

41. Increase the student's ability to make career choices.

42. Increase career mobility (vertical or horizontal).

*Statement numbers appearing on Opinionnaire I (Delphi I)



*Delphi I

Figure 1
Rank and relative importance of objectives of interdisciplinary health professions education as assessed by vice presidents of health sciences centers on Delphi Round III.

new priorities are established, not enough energy will be exerted to create the nexus needed for convergence education and interdisciplinary activities will cease to exist.

Research Question Four:

"What educational strategies are the most effective in order to achieve the objectives of interdisciplinary health professions education?"

The clinical team approach was the teaching strategy of choice. Table 1 shows the relationship between teaching strategies, content delivery patterns and timing. The implication is that there will need to be a great deal of planning between and among the faculty of each program to effect at least one clinical experience in which there is the beginning of optimization of functions. Faculty role modeling would also facilitate the image, but this means that some faculty person from each program will have to become involved in the delivery of patient care. This may represent a change from the ivory tower to the real world, a bridge not easily established for the academician of long standing. A change from the usual academic schedule for faculty to permit this type of clinical involvement may also be necessary.

Research Question Five:

"What value is attached to interdisciplinary activities within the education of the health professional?"

Despite the considerable problems facing the vice presidents of the health sciences center related to the budget constraints and the pressure for students to achieve well on the licensure exams, support is evident for interdisciplinary activities. Since there is commitment to the interdisciplinary concept, the implication is that the effort should be institutionalized as much as possible without creating a polarity between faculty and administration. The climate should become conducive to the development of faculty interaction and rewarding faculty for participation in the untried and unproven experiment.

Table 1

Teaching Strategies, Content Delivery Patterns, Timing of Interdisciplinary Health Professions Education Assessed by Vice Presidents of Health Sciences Centers (I=N 15, II=N 6, III=N 12)

Statement Numbers Round I	Round II/III	Statements	Agree Round I	Agree Round II/III	Disagree Round I	Disagree Round II/III
		TEACHING STRATEGIES:				
17		Clinical models are the most effective methods for teaching team cooperation	86%	95%	14%	7%
	17 10	The different social ages of the student do not hamper cross-disciplinary interaction in the clinical setting		75%		25%
		CONTENT DELIVERY PATTERNS:				
18		Instruction in group process is important to any experience in team education	86%		14%	
		Common health professions subject matter courses stimulate willingness for mixed groups to communicate across disciplinary lines	80%		20%	
	20	Interdisciplinary models naturally arise when you are in a small community hospital or rural setting		42%		58%
		EVALUATION ON TIMING:				
	6	Interdisciplinary health professions education should occur as early as possible in the professional education process		92%		8%
	7	Interdisciplinary health professions education should be the interface between the last stage of education and entering the health service role		42%		58%
	8	Interdisciplinary health professions education should be deferred to post professional programs		8%		92%

Table 2 shows the relationship between statements asked.

Research Question Six:

"What are the common subject areas in the education of various health professionals?"

According to the respondents in this study, there is also a likelihood that the following courses will become universally acceptable as common inter-disciplinary subject matter courses:

Medical terminology
Medical ethics
Medical records
Public health concepts
Health care delivery system
Death and dying
Aging courses

There are also a plethora of others that would be equally applicable. Please note that there were no prerequisite courses suggested. It would seem that this would improve the student success rate in the classes substantially since material is new to the majority of students and consequently a negative role impression is not created due to lack of background.

Although consensus level was not reached, the respondents identified the following as being needed and expressed the probability of the following being created within the next 10 years:

Communication skills
Group dynamics
Health care delivery system
Asepsis
Public health concepts
Communicable disease
Human sexuality

It should be noted that all but two of these courses, asepsis and communicable diseases, requires interaction among health professionals.

It was interesting to note that there was one clinical skill course on the list among those that received the highest rating. Yet, when the objectives were ranked, the development of common clinical skills was listed in 10th place out of a possible 12. Some difference of opinion may have been created by a respondent's interpretation that all health professionals would have the same clinical skills rather than the identification of clinical skill areas which are common to several groups of health professionals. For instance, "range of motion"

Table 2

Value Statements Related to Interdisciplinary Health Professions Education as Perceived by Vice Presidents of Health Science Centers (I = N 15, III = N 12)

Statement Numbers Round I	Round III	Statements	Agree Round I	Agree Round III	Disagree Round I	Disagree Rou II
5		Interdisciplinary education is a critical component of health professions education.	80%		20%	
8		Medicine should be exempt from interdisciplinary health professions courses.	100%			
9		The interdisciplinary education concept in health professions education is faulty and should be abandoned.	100%			
	22	Higher quality learning is more likely to result from a mixture of students from different programs in a common subject area such as "legal aspects of health professions."		75%		25
	23	Higher quality learning is more likely to result from enrolling a mixture of students from different programs in a basic science course such as "anatomy."		8%		92
20	26	Budget limitations justify elimination or nondevelopment of effective interdisciplinary health professions courses.	20%	20%	66%	83
27	27	If performance on licensing exams is unacceptable, interdisciplinary health professions courses would be minimized or eliminated.	33%	20%	20%	80

is taught to students of recreation and others serving on the rehabilitation team. When a question was asked concerning the overlapping skill areas, one of the respondents answered that a common course was desirable. When we consider the possibility of the expansion of function of some health professionals, we will probably find more areas of skill that will be held in common. Two such areas are history-taking and physical assessment. The delegation of tasks will be more readily effected if health professionals feel confident that another health professional has the necessary skills to function as well (or better) than the delegator. The implication is for a course (or courses) consisting of the overlapping skills areas which could be taught to a multidisciplinary group of health professions students who have similar backgrounds.

Research Question Seven:

"What are the barriers to interdisciplinary health professions education?"

The barriers seem formidable. They ranged from those imposed by external forces to those inherent in the human being and threatening to his self worth. Research is needed to answer the question of whether "higher quality learning" is possible and whether the "facilities, faculties, and learning resources are being used more efficiently". The fear of domination may be overcome by providing the opportunity for the faculty to discuss these fears and also to identify clearly the concept of teamanship and shared leadership. Both of these are inherent in the interdisciplinary concept. Unfortunately, many potential team members do not understand that the team has been established to maximize the individual and professional differences and skills rather than to compete. The implication exists for faculty development in this area.

The effect of placing students in basic science courses together has been demonstrated by research and experience. It simply does not work. This was borne out in the responses of the respondents also. The difference in background preparation may be staggering and the lack of such prerequisites may

cause negative role stereotyping. The implication here is that the previously held theory of total integration of all students at all possible levels should abandoned. The application of the theory does not appear to fit as it pertains to the basic sciences.

The outside influence upon interdisciplinary education (as perceived by the respondents) apparently is the formidable force of the accrediting bodies. The reaction of the panelists was mostly militant. The resultant effect of the highly specialized accreditation bodies has plagued the health sciences centers for years. The call for an evaluation of the process was made several years ago and a study was conducted by William K. Selden. Unfortunately, the results of that evaluation have not been used. Now with tightening budget constraints, the demands of some accrediting agencies will not be able to be met. Group action by the Association of Academic Health Science Centers may serve to loosen the vise-like grip that accreditation agencies seem to have. The implication may be that if the private sector does not wake up and police itself, then governmental intervention by establishing a national policy, institutional licensure, and standards of education may result. The social issue is whether or not the federal government should take the responsibility to provide health care for the people. The people demand health care as a right. As a consequence, the education of the provider of that service may be dictated in the best interest of all concerned. Table 3 shows the relationship between the barriers.

Research Question Eight:

"Are Interdisciplinary Health Professions Courses needed to deliver effective health care of the future?"

Research question eight posited the question, "Are interdisciplinary health professions courses needed to deliver effective health care of the future?" The affirmative responses were coupled with the need not only to provide the courses but also to do those things that create the climate for change,

Table 3

Barriers to Interdisciplinary Health Professions Education and Corrective Actions as Perceived by Vice Presidents of Health Science Centers (I = N 15, III = N 12)

Statement Numbers Round I	Round III	Statements	Agree Round I	Agree Round III	Disagree Round I	Disagree Round III
	25	The problem of interdisciplinary health professions education is largely one of an innovation that is not understood.		64%		36%
15		Fear of dominance or loss of autonomy presents faculty from involvement with interdisciplinary health professions courses.	80%		20%	
	14	To overcome faculty resistance to interdisciplinary health professions education, the faculty need to be of the "senior" type and highly respected.		42%		58%
	10	The different social ages of the student do not hamper cross-disciplinary interaction in the clinical setting.		75%		25%
	23	Higher quality learning is more likely to result from enrolling students from different programs in a basic science course such as "anatomy".		8%		92%
28	11	Accreditation agencies hamper interdisciplinary health professions innovations.	53%	75%	27%	25%
19	13	Interdisciplinary health professions education uses facilities, faculties, learning resources more efficiently.	47%	50%	33%	50%
27	27	If performance on licensing exams is unacceptable, interdisciplinary health professions courses would be minimized or eliminated.	33%	18%	20%	82%

but not to mandate them.

Research Question Nine:

"Should Interdisciplinary Health Professions Courses be abandoned?"

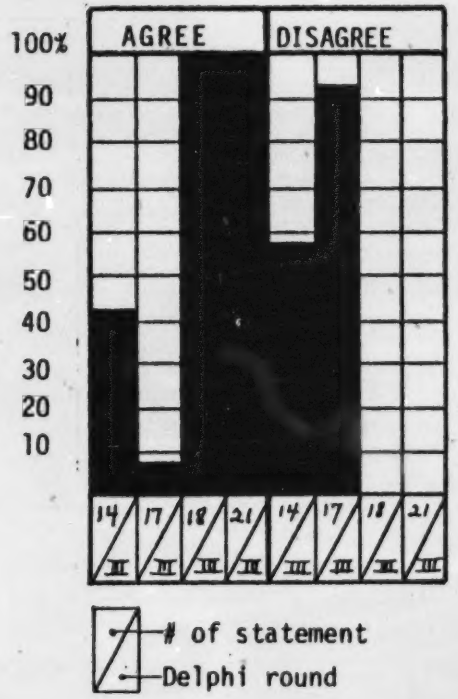
Again, the "no, they should not be abandoned" answer may assist the vice president of health sciences everywhere to explore confidently the ways to create the milieu for the dynamics that is needed to create the cooperative sharing of learning by all the health professions programs. From the responses received from the participants in this study, the implication is to focus the educational process on health care delivery. One potential benefit of this emphasis is that the medical student, the student of nursing, the majority of other health professionals and the faculty would be involved in a problem solving situation. Because the patient is central, territoriality may be diminished and values changed. Those faculty participating in the patient-centered problem solving may as a result, value the innovative experiences and work hard to promote the convergence experiences. Other change strategies were also suggested. Figure 2 shows the relationship among them.

Research Question Ten:

"At what point in the professional education process should Interdisciplinary Courses be placed?"

A problem in answering this question lies in the wide diversity of educational patterns that are available in the health professions. Since some programs are professional on the baccalaureate level, other at the master's, and still others at the doctoral level, the question posed some problems. However, the majority preferred to set the stage at the earliest possible moment, and provide a continuum of activities throughout the curriculum. This is consistent with the literature that suggested that time is needed to assimilate new roles and relationships.

The response profile indicated that the participants in this study



III = N 12

The statements are:

14-III. To overcome faculty resistance to interdisciplinary health professions education the faculty needs to be of the "senior" type and highly respected.

17-III. We need to select a different type of medical student if we want to overcome the traditional stratification.

18-III. The demonstration project is the way to change centuries of educational tradition such as in medicine.

21-III. Interdisciplinary education needs to be "institutionalized" through administrative recognition and encouragement of faculty efforts.

Figure 2
Responses by vice presidents of health sciences centers to change strategies suggested to achieve integration of interdisciplinary concepts within the academic health sciences center.

espoused an early core-type course to bring the students together into the classroom and as their professional development progressed, so would the development of interactive activities until the thread of interdisciplinary concepts emerged into an experiential health team delivery practicum.

Analysis of a Nonconsensus Item

The findings with respect to one item on which consensus was not reached are presented here because of the emerging implication. Turoff (1970) indicated that when there is polarity of response, the items often lack sufficient evidence. The vote of 50%-50% on the determination of whether facilities, faculties and learning resources are used more efficiently" reflects the varied experiences of the respondents and the lack of definitive research on the question. It appears that no trend is identifiable because of the dichotomy of the experiences and the lack of research on the cost-effectiveness of interdisciplinary health professions education. Because of the social pressure mounting as discussed under research question one, however, there is an implication that such research is needed.

Table 4 groups items together that pertain directly to administrative concerns. The respondents identified the task of the university to be the definition of professional roles. This would be achieved by eliminating some and expanding others. The comments were related to the need to "optimize people, clinical plant and to educate the public because the health dollars of the GNP would not accept any more expansion". (A respondent's comment.) A respondent also stated that this should be effected in relationship to the professional societies who could assist with the changes in the practice laws. Another respondent noted that task analysis and employer participation would help to expand roles. Nursing and pharmacy were two roles cited by a respondent as needing a broader concept.

Table 4

Statements Relating to Administration of Interdisciplinary Health Professions Programs Assessed by Vice Presidents of Health Sciences Centers (I = N 15, II = N 6, III = N 12)

Statement Number			Agree		Disagree	
Round I	Round II/III	Statements	Round I	Round II/III	Round I	Round II/III
19	13	Interdisciplinary health professions education uses classroom facilities, faculties and learning resources more efficiently	47%	50%	53%	50%
28	11	Accreditation agencies hamper interdisciplinary health professions innovations	53%	75%	47%	25%
	4	Health professional education institutions have the obligation to test the hypothesis that teams are the optimum cost effective method to provide health care		83%		17%
16		The University has a responsibility to help define professional roles by eliminating some and expanding others	93%		7%	
	16			100%		

Role of the Academic Health Sciences Centers in Research Related to Interdisciplinary Activities

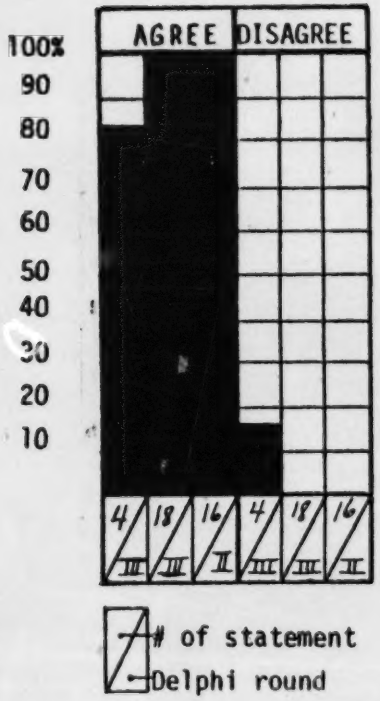
Of the vice presidents who responded to Delphi III, 83% supported the need for research in this area and also supported their role in providing the needed data base. The respondents stated that the demonstration project was a way to substantiate different methods, measure their relative cost effectiveness and the likelihood of producing desired changes. The definition and scope of professional practice roles was strongly viewed as a function of the academic health sciences center, too. Figure 3 shows the relationship and percentage of response to these statements.

Conclusions on the Additional Findings from this Study

The grouping of four key statements pertaining to philosophy, goals, and learning objectives together indicated some of the positive potential of interdisciplinary education. The grouping showed that the respondents see this concept as one of the important forces in more effective delivery of health care.

Forecasting the future, a trend appeared to emerge toward development of a new type of team, the primary care team. This team was seen as a response to the needs of the public for "efficient, effective, comprehensive and personalized health care" as Pellegrino had espoused in 1972. Table 5 shows the four futuristic statements asked and the response ratings of the expert panel.

Although consensus was not sought on the statements related to what the faculty needed, the trend that emerged appears to support the need for preparing the faculty for the role. Interdisciplinary communication and planning on the faculty level is needed before the student detects the non-verbal behavior pattern that belies an uncommitted attitude.



The statements are:

4-III. Health professional education institutions have the obligation to test the hypothesis that teams are the optimum cost-effective method to provide primary health care.

18-III. The demonstration project is the way to change centuries of educational tradition such as in medicine.

16-II. The university has a responsibility to help define professional roles by eliminating some and expanding others.

Figure 3

Responses by vice presidents of health sciences centers to the possible role of the academic health sciences center in research related to interdisciplinary activities.

Table 5

Future Predictions Related to Health Professions Education as Perceived by Vice Presidents of Health Science Centers (I = N 15, III = N 12)

State-ment #	Delphi round	Statements	Agree	Dis-agree
4	I	Interdisciplinary team education is needed to deliver effective health care for the future.	100%	
5	III	The use of teams in the ambulatory care setting is the focus of the future.	83%	17%
15	III	The principal thrust of interdisciplinary health professions education needs to be on primary care--the best possible patient care.	75%	25%
19	III	Mutual support and sharing of the multiplicity of tasks through team efforts will help to retain the critical mass of health professionals in a geographic area.	83%	17%

The role of the academic health sciences center was clearly stated by respondents as being supportive and responsible for research in the area of interdisciplinary health professions education. The source for funding such evaluative or demonstration projects could be from private foundations or federal dollars. Even if the health sciences center elects not to conduct its own research, the recommendation clearly emerged from the respondents that there was a responsibility to utilize the results of other studies.

Of considerable importance is the resultant dichotomy that appeared on several key issues. If consensus could not be achieved by the 15 expert respondents in this study to those issues, the probability exists that the mid-management person, the typical educator and the health professional will have an even more difficult time in resolving these issues effectively.

Recommendations

Based on the findings, conclusions, and implications of this study and the insights gained through the conversations with 15 distinguished leaders in the field of health professions education, this investigator recommends the following for consideration.

1. A concerned effort be made by administrators and faculty of academic health sciences center and other collegiate programs to institutionalize the concept of interdisciplinary education. The national priorities in health are toward a national health care system for all. The burden of providing that care comes indirectly on the institutions that educate the health professionals. Most institutions recognize this responsibility, but few have changed the traditional method of education despite the need to shift gears and prepare the student to deliver more cohesive and therefore, a more efficient, effective and humanizing type of health care.

2. The delivery of health care was assessed as being best met by the primary and ambulatory health care team, according to the expert respondents

in this study. The mandate appears clear, therefore, that institutional priorities for the actualization of the interdisciplinary concept should be enunciated by the administrator.

3. How do we get the cohesiveness of function that is desired when faculties are still guarding their "turf" and regarding the concept of interdisciplinary activities as some sort of sinister encroachment of territory? The recommendation is made that the administration foster the milieu of participatory planning of educational experiences, reward faculty efforts in interdisciplinary activities in a substantive way, and create the systematic strategy for the integration of the interdisciplinary concept.

4. Seeking the expertise of a change agent who will help to establish the plan and begin to implement the strategy would not be unwise. The expectant results should not be forced nor effected prematurely. The faculty, wise with years of competent, responsible health care practice, must be valued for their input into this dynamic and unfamiliar territory.

5. Choose the faculty for interdisciplinary activities carefully. Corroboratory statements from respondents in this study and the literature indicate the characteristics desired are to "be flexible, to possess an effective personality, to be a reputable clinician and to be experienced in group techniques." The need for faculty role modeling to "make the educational experience authentic" and the need for faculty to become participants on a health care delivery team was also important.

6. Engage in research activities to demonstrate the result and process needed to achieve education that leads to synchronized practice in the delivery of health care.

7. Post professional education should also emphasize the team concept as it prepares the specialists to function on the secondary and tertiary health care team.

8. Reach out into the community for a non-traditional educational site

and an innovative climate which may help to effect the changes in planned professional education and delivery of patient care. An example might be a storefront mental health clinic or AHES site. The need for the public to be prepared to accept a different delivery model is of utmost importance. Acceptance will be its own reward, if the system is as effective as purported.

9. Encourage the student to participate in interdisciplinary activities and reward him for doing so. This is essential for a grass-root movement toward interdisciplinary education, especially among the medical students.

10. The Association of Academic Health Sciences Centers should deliberately move to bring about cohesive forces between accreditation agencies and licensure boards and the health sciences centers.

11. Accept the challenge to change before further governmental controls mandate a new direction and the evaluation of performance falls upon the practice institutions.

12. Focus attention on interdisciplinary efforts by exploring the value and philosophic foundation through several national conferences; provide strategy workshops for educators; symposiums utilizing the practice model for professionals; promote and publicize demonstration practice models and begin to educate the public to a new delivery model. Increasing the federal and private dollars for demonstration projects as well as research into the dynamics of the interdisciplinary concept cannot be under-emphasized as the academic health sciences center under ago financial strain.

The Dissertation and the Media Presentation

Complete copies of the dissertation (217 pages) with additional findings and the edited statements of the respondents are available for the cost of reproduction.

A colored slide-tape presentation of the major findings is also available. To arrange for a showing, please contact:

Dr. Marilyn-Lu Jacobsen
University of Kentucky
College of Nursing
Medical Center Annex #2
Lexington, Kentucky 40506
(606) - 233-6248

Permanent home address:

Dr. Marilyn-Lu Jacobsen
c/o Mr. & Mrs. William Webb
Box 485
RD #1
Northville, New York 12134

REFERENCES

Adrey, R. The Territorial Imperative. New York: Atheneum, 1966.

Aradine, C. R., and Hansen, M. F. Interdisciplinary teamwork in family health care. Nursing Clinics of North America, June, 1970, 5(2), 211-222.

Banta, H. D., and Fox, R. C. Role strains of a health care team in a poverty community. Social Science and Medicine, 1972, 6, pp. 697-722.

Barriers to Interdisciplinary Education. A Prospectus for Change. College of Allied Health Professions, University of Kentucky. January-February, 1977, II(1).

Beckhard, R. Organization issues in the team delivery of comprehensive health care. Milbank Memorial Fund Quarterly, July 1, 1972, pp. 287-316.

Beckhard, R., and Rubin, I. The M.I.T. program. Health Team News, The Institute for Health Team Development, Montefiore Hospital and Medical Center, Bronx, New York, December 1974, 1(6), 287-316.

Beloff, J. S., Korper, M., and Weinerman, E. R. Medical student response to a program for teaching comprehensive care. Journal of Medical Education, 1970, 45, pp. 1047-1059.

Blackburn, J. Forward. Twelfth national core conference, Chapel Hill, North Carolina, October 8-10, 1964, High School Journal, February, 1965, 48.

Boles, B. K. Interpersonal skills development in health professions education. Journal of Allied Health, Fall 1976, 5(4), 23-30.

Brockhoff, K. The performance of forecasting groups in computer dialogue and face to face dialogue. In H. A. Linstone and M. Turoff (Eds.), The Delphi Method. Reading, Massachusetts: Addison-Wesley, 1975.

Brunetto, E., and Birk, P. The primary care nurse-the generalist in a structured health care team. American Journal of Public Health, June, 1972, 62(6), 785-794.

Burnett, C. N. A closer look at core. Journal of Allied Health, Summer, 1973, pp. 107-112.

Burris, D., and Kempe, H. Joint education of medical students and allied health personnel. American Journal of Diseases of Children, November, 1968, 116, pp. 499-504.

Cain, R. M., and Kahn, J. S. The pharmacist as a member of the health team. American Journal of Public Health, November, 1971, 61(11), 2223-2228.

Carlaw, R. W., and Callan, L. B. Team training. Health Services Report, April, 1973, 88(4), 328-336.

Center for Advanced Study of Educational Administration. Designing and Testing Ariole. A Planning Guide. University of Oregon, August 1973. In D. R. Potter. Unpublished doctoral dissertation proposal, Texas A&M University, 1975.

Committee of Presidents of the Health Professionsl Education Associations, Association for Academic Health Centers, transcript of statement of definition of interdisciplinary education, April 3, 1976.

Connelly, T. Interdisciplinary References V, unpublished document, Center for Interdisciplinary Education in the Health Sciences, University of Kentucky, September 1976.

Cunningham, J. W. A conceptual framework for the study of job similarities, the job-cluster concept and its curricular implications, a symposium. North Carolina State University, Raleigh, 1969.

Cutting health care costs is HRA's first priority. Health Daily, Sample Issue, October 1976, (1), 3.

Dalkey, N. C. An elementary cross-impact model. In H. A. Linstone and M. Turoff (Eds.), The Delphi Method. Reading, Massachusetts: Addison-Wesley, 1975.

Davis, B. Medical education: the pursuit of excellence comes under attack. Medical Opinion, June 1971.

Delbecq, A. L., Van deVen, A. H., and Gustafson, D. H. Group techniques for program planning. Glenview, Illinois: Scott, Foresman, 1975.

Education for the allied health professions and services. Bureau of Health Manpower, Public Health Service, USDHEW, Washington, D. C., 1967.

Education for the health team, Institute of Medicine, National Academy of Sciences, 1972. In M. S. Infante et al. An interdisciplinary approach to the education of health professional student. Journal of Allied Health, 1976, 5(4).

Eichenberger, R. W., and Gloor, R. F. A team approach to learning community health. Journal of Medical Education, August 1969, 44, pp. 655-662.

Eichorn, S. F. Becoming: the actualization of individual differences in five student health teams. Bronx, New York: Institute for Health Team Development, 1973.

Fraden, J., and Schneider, F. R. A program for the orthopaedic assistant, City College of San Francisco, 1970.

Fry, R. E., and Lech, B. A. An organizational development approach to improving the effectiveness of neighborhood health care teams: a pilot program. A report. Dr. Martin Luther King, Jr. Health Center, 3674 Third Avenue, Bronx, N.Y. 10456, June, 1971.

Fullerton, B. J. The identification of common courses in paramedical education. Tempe, Arizona: Arizona State University, 1968. (ERIC Document Reproduction Service No. ED 010190).

Garfield, S. The delivery of medical care. Scientific American, April 1970, 222(4), 15-22.

Garfield, S. R.; Morris, F. C.; Feldman, R.; Soghikian, F.; Richart, R. H.; and Duncan, J. H. Evaluation of an ambulatory medical-care delivery system. New England Journal of Medicine, 1976, 294, pp. 426 (abstract).

Geertsma, R. H., and Hastings, G. E. Interdisciplinary perceptions of the public health nurse. Medical Care, March-April 1971, 9(2), 152-159.

George, M. The comprehensive health team. Journal of Nursing Administration, March-April 1971, 1, pp. 9-13.

Goldberg, E. M.; Neill, J.; Speak, B. M.; and Faulkner, H. C. Social work in general practice. The Lancet, September 7, 1968, pp. 552-555.

Hamburg, J. Core curriculum in allied health education. Journal of American Medical Association, October 6, 1969, 210(1), 111-113.

Hamm, R. Core curriculum at the crossroads. Teachers College Journal, November 1967, 39.

Hawkins, R. O. Core curriculum. In E. J. McTernan and R. O. Hawkins, Jr. (Eds.), Educating Personnel for the Allied Health Professions and Services. St. Louis: Mosby, 1973.

Health manpower education grants, interdisciplinary team training, fiscal year 1976. Bureau of Health Manpower, Office of Interdisciplinary Programs, descriptive summary.

Horwitz, J. J. Team practice and the specialist: an introduction to interdisciplinary teamwork, New York: Charles C. Thomas, 1970.

Infante, M. S., Speranza, K. A., and Gillespie, P. W. An interdisciplinary approach to the education of health professional students. Journal of Allied Health, 1976, 5(4), 13-22.

Ingmire, A. E., and Blansfield, M. G. A development program for the hospital team. Nursing Forum, 1967, 6(4), 382-392.

Interdisciplinary health care training program at the Medical College of Georgia. A Prospectus for Change, Center for Interdisciplinary Education, College of Allied Health Professions, University of Kentucky, May-June 1977, II(3).

Interdisciplinary health care training at the Medical College of of Georgia. A Prospectus for Change, Center for Interdisciplinary Education, School of Allied Health Professions, University of Kentucky, May-June 1977, III(3).

Interdisciplinary health manpower education. Unpublished document, Association for Academic Health Centers, Washington, D. C., April 3, 1976.

Interdisciplinary education in the health sciences: a program for learning how health teams function. Health Team News, The Institute for Health Team Development, Montefiore Hospital and Medical Center, Bronx, New York, October 1, 1974, 1(5).

Jackson, R. B. The team approach to the management of skin cancer. Medical Services Journal, Canada, December 1967, pp. 1393-1399.

Kahn, R. L., and Kane, R. A. Physicians attitudes of omnipatience in a university hospital. Journal of Medical Education, August 1969, 44, pp. 684-689.

Kane, J. A primer for a new cross-impact language-KSIM. In H. A. Linstone and M. Turoff (Eds.), The Delphi Method. Reading, Massachusetts: Addison-Wesley, 1975, pp. 369-382.

Kennedy, E. M. The challenge of health professions education in the seventies. Journal of Medical Education, 1973, 48, pp. 3-7.

Kenneth, H. Y. Medical and nursing students learn together. Nursing Outlook, November 1969, pp. 46-49.

Klopfenstein, T. Conference materials from core and cluster demonstration project for allied health programs at Kellogg Community College, Battle Creek, Michigan, held in Albany, New York, April 9, 1973.

Kneisl, C. R. Increasing interpersonal understanding through sociodrama. Perspectives in Psychiatric Care, 1968, 6(3), 104-109.

Kovner, A. R., and Seacat, M. S. Continuity of care maintained in family-centered hospitals. Journal American Hospital Association, July 1, 1969, 43, pp. 89-94.

Kunze, L. H., Campbell, M. M., and McBain, K. A. Interdisciplinary student training in mental retardation. Mental Retardation, 1969, pp. 15-19.

Lashof, J. C. The health care team in the mile square area, Bulletin New York Academic of Medicine, November 1968, 44(11), 1363-1369.

Leininge, M. This I believe - about interdisciplinary health education for the future. Nursing Outlook, December 1971, 19(12), 787-791.

Lewis, C. E., and Resnik, B. A. Relative orientations of students of medicine and nursing to ambulatory patient care. Journal of Medical Education, February 1966, 41, pp. 162-166.

Linstone, H. A., and Turoff, M. (Eds.). The Delphi Method. Reading, Massachusetts: Addison, Wesley, 1975.

Mason, E. J., and Parascandola, J. Preparing tomorrow's health care team. Nursing Outlook, November 1972, 20(11), 728-731.

McCaulley, M. How individual differences affect health care teams. Health Team News, The Institute for Health Team Development, Montefiore Hospital, Bronx, New York, April 1, 1975, 1(8).

Mira, M. P. An analysis of the behavior of a professional group. Social Science and Medicine, 1969, 3, pp. 95-100.

Modlin, H. C., and Faris, M. Group adaption and integration in psychiatric team practice. Psychiatry (brief communications), September 1956, 19, pp. 97-103.

Peck, E., Gorman, J., Folley, S., Horn, R., and Sprowles, B. Preparing professionals for an interdisciplinary approach to health problems. Paper presented at the Annual Meeting of the American Public Health Association, Minneapolis, October 1971.

Pellegrino, E. D. Care systems require unity and diversity in education for all health professions. Paper at a conference: Health Issues of the Day, National League for Nursing, 1963.

Pellegrino, E. D. Interdisciplinary education in the health professions: Assumption, definitions, and some notes on teams. In E. Pellegrino (Chair.), a report of a conference: Educating for the Health Team. Institute of Medicine, National Academy of Sciences, October 4, 1972, p. 9.

Pellegrino, E. D. Allied health concept-fact or fiction? Journal of Allied Health, Spring 1974a, pp. 79-84.

Pellegrino, E. D. The goals and priorities of a comprehensive national health policy. Vesper Exchange, June 1974b.

Pellegrino, E. D. Impact of changing social and political climate on education. American Journal of Pharmaceutical Education, December 1974c, pp. 726-739.

Pellegrino, E. D. Interdisciplinary health care, proceedings of the second annual national conference for mental health pharmacists. University of Tennessee Center for Health Sciences, Memphis, Tennessee, June 6-7, 1974d.

Pellegrino, E. D. The academic role of the vice president for health sciences: can a walrus become a unicorn? Journal of Medical Education, March 1975, 50, pp. 221-228.

Phillips, R. C. Development of the term core curriculum. Educational Forum, May, 1965, 29, P. 423.

Pill, J. Delphi method: substance, context, a critique and an annotated bibliography. Socio-economic Planning Science, 1971, 5, pp. 57-71.

Rasp, A., Jr. Delphi: a decision-maker's dream. Nations Schools, July 1973, 92(1), 29-32.

Reed, D. C. Integrated teaching for medicine and allied health. Journal of Allied Health, Fall 1973, pp. 159-162.

Rueveni, U. Using sensitivity training to develop teamwork with nursing supervisors. Hospital Topics, March-April 1972, 18.

Scheibe, M., Skutsch, M., and Schofer, J. Experiments in Delphi methodology. In Linstone, H. A. and Turoff, M. (Eds.), The Delphi Method. Reading, Massachusetts: Addison-Wesley, 1975.

Roush, R. E. Interdisciplinary education in the health professions: a caveat from research. Journal of Allied Health, Fall 1973. pp. 150-154.

Simpson, G. A. The family health worker at the community field level. Annuals New York Academy of Science, n.d.

Szasz, G. Education for the health team. Canadian Journal of Public Health, September-October 1970, 61, pp. 386-390.

Tanner, L. A., and Soulary, E. J. Interprofessional student health teams. Nursing Outlook, February 1972, 20(2), 111-115.

Tichy, M. K. (Ed.) Health care teams: an annotated bibliography. New York: Praeger, 1974.

Toward a generic definition of interdisciplinary education. A Prospectus for Change, Center for Interdisciplinary Education, College of Allied Health Professions, University of Kentucky, March-April 1977, II(2).

Trail, I. D. Health Policy: elements and influences. Conference proceeding: National Health Council's 24th National Forum, Philadelphia, March 16-17, 1976, pp. 45-53.

Turoff, M. The design of the policy Delphi. Technological Forecasting and Social Change, 1970, 2.

Turoff, M. An alternative approach to cross-impact analysis. In Linstone, H. A. and Turoff, M. (Eds.), The elphi Method. Reading, Massachusetts: Addison-Wesley, 1975.

Tyler, R. The core curriculum. National Education Association Journal, December 1953, 43, p. 563.

U. S. Department of Health, Education and Welfare, Office of Education: Demise of the required core at Ovaldike College. Journal of Higher Education, December 1967, 38.

Weaver, W. T. The delphi forecasting method. Phi Delta Kappan. January 1971, In H. A. Linstone and M. Turoff (Eds.), The Delphi Method. Reading, Massachusetts: Addison-Wesley, 1975.

Wise, H. B., Torrey, E. F., McDade, A., Perry, G., and Bograd, H. The family health worker. American Journal of Public Health. October 1968, 58(1), 1828-1838.

Wise, H. B. The primary care health team. Archives of Internal Medicine, September 1972, pp. 438-444.